

## **REMARKS**

The aforementioned Office Action rejected claims 1-8 as unpatentable under 35 USC 103(a) over the disclosed prior art in the background of invention section of this application in view of Becker et al., U.S. Patent No. 6,294,053. This rejection is traversed. More specifically, this rejection is traversed on the grounds that a person of ordinary skill in the relevant art (the technology of electrophoretic displays) would not combine Becker with the background art mentioned in this application, since Becker is clearly non-analogous prior art.

Claim 1 of the present application is directed to an electrophoretic medium comprising a plurality of capsules, each capsule comprising an internal phase comprising a plurality of electrophoretically mobile particles *in a gaseous suspending medium*, and a capsule wall surrounding the internal phase (emphasis added). The introductory part of this application acknowledges that it is known to produce encapsulated electrophoretic media having liquid suspending media. The Examiner states that "The patent to Becker et al. is applied for teaching that it is conventional to suspend electrophoretic particles in either gas or liquid." With respect, this remark greater oversimplifies the situation.

The Becker apparatus is in no sense a display, but rather a micro-manipulator in which isolated, discrete "packets" can be moved over a reaction surface using electrophoretic, dielectrophoretic or other forces, including direct manual manipulation (see, for example, the paragraph bridging columns 7 and 8). Becker does teach that the packets being manipulated may be present within either a gas or a liquid. However, this would not teach the skilled person anything other than that electrophoretic and dielectrophoretic forces can act through both liquids and gases, a fact surely known to the average high school physics student.

The manipulation of isolated single packets effected in Becker bears essentially no resemblance to what happens in either a liquid-based or gas-based encapsulated electrophoretic medium, in which a large number of electrophoretic particles, which may be of more than one type, are moved simultaneously within the

narrow confines of a microcapsule by means of an electric field applied by electrodes disposed outside the microcapsule. The behavior of an encapsulated gas-based display is necessarily greatly affected by collisions between particles, in which the colliding particles may be of the same or (in the case of dual particle displays) different types. No such collisions are effected in Becker unless it is desired that the two particles interact in a controlled manner, for example when the two "particles" are droplets of reagents which it is desired to react with each other, and even then the collisions are effected in a closely controlled manner, as opposed to the numerous random collisions which take place in an encapsulated gas-based display. The effect of such collisions is especially important since in many such displays (see the Yamaguchi paper mentioned in Paragraph 11 of the description and included in the Information Disclosure Statement) it is the collisions between particles which are responsible for generating the charges on the particles necessary for electrophoretic motion; obviously, gas-based displays cannot make use of the charge control agents typically added to the liquid suspending fluids of liquid-based displays to provide the charges on the particles.

The behavior of electrophoretic particles in encapsulated gas-based displays is also greatly affected by interactions between the electrophoretic particles and the capsules walls; for example, the switching of such a display could be seriously affected if the capsule wall caused charge to leak from the electrophoretic particles. Obviously, no such particle/capsule wall interactions are present in the Becker apparatus.

Finally, although Becker does teach that the "packets" manipulated in his apparatus, can have a wide variety of forms, including liquid droplets, bubbles and capsules, it should be noted that the manipulation of capsules effected in Becker is not the same as switching of the gas-based displays of the present invention. In Becker, the manipulation of the capsule is a bodily movement of the entire capsule, including the capsule wall and any contents. In contrast, in switching the electrophoretic medium of the present invention, the electrophoretic particles are moved within and relative to the capsule wall.

*Jacobson et al.*  
*Serial No. 10/605,039*  
*Response to Office Action, March 17, 2006*  
*Page 4*

For all the foregoing reasons, Becker would not teach a person of ordinary skill in the relevant art that the liquid suspending fluid present in prior art displays could usefully be replaced by a gaseous fluid. Hence, the 35 USC 103 rejection is unjustified and should be withdrawn.

Since the normal period for responding to the Office Action expired January 18, a Petition for a two month extension of this period is filed herewith.

Reconsideration and allowance of all claims remaining in this application is respectfully requested.

Respectfully submitted  
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